

J. G. SHEA.  
SPARK PLUG.  
APPLICATION FILED JUNE 13, 1908.

915,896.

Patented Mar. 23, 1909.

Fig. 2.

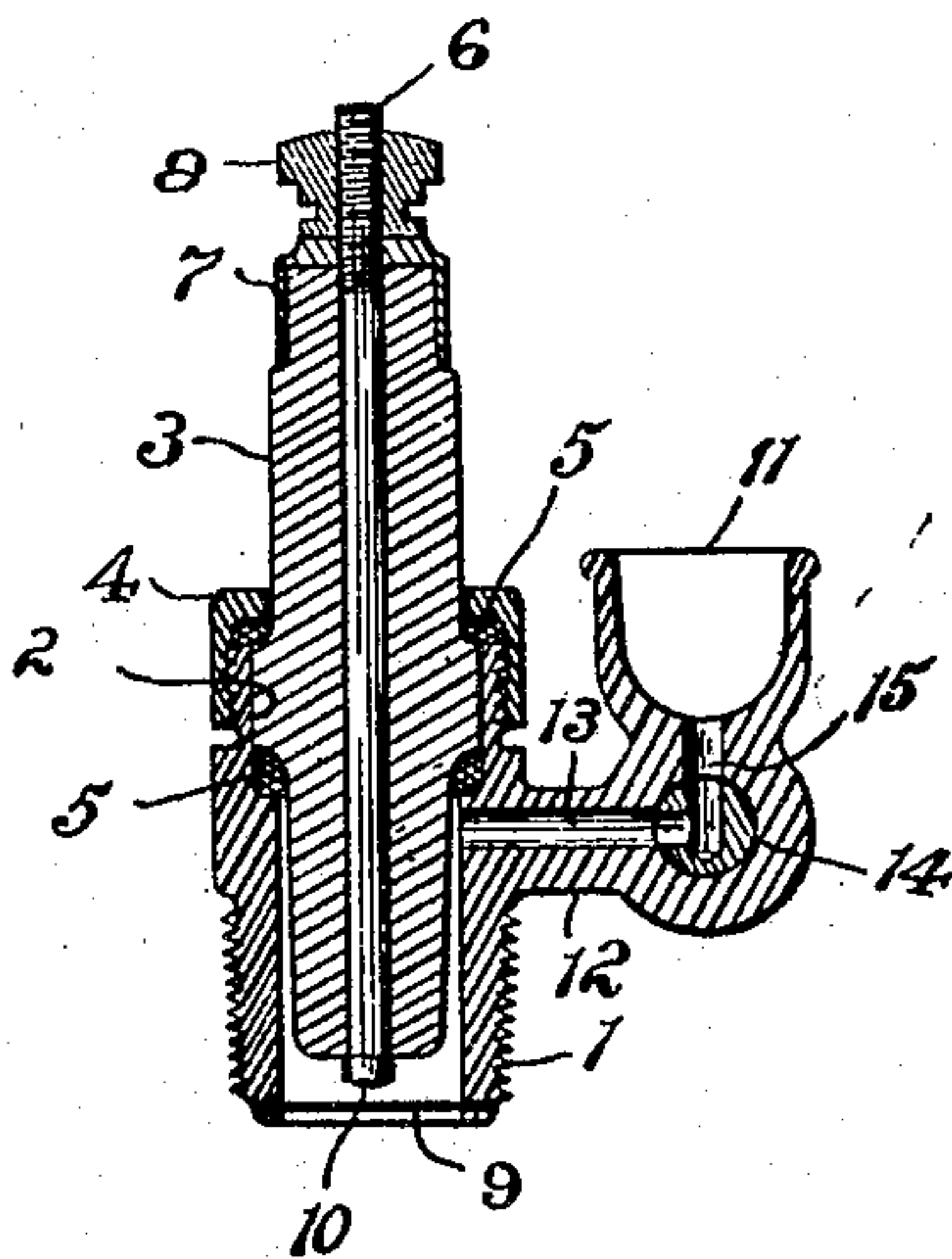


Fig. 1.

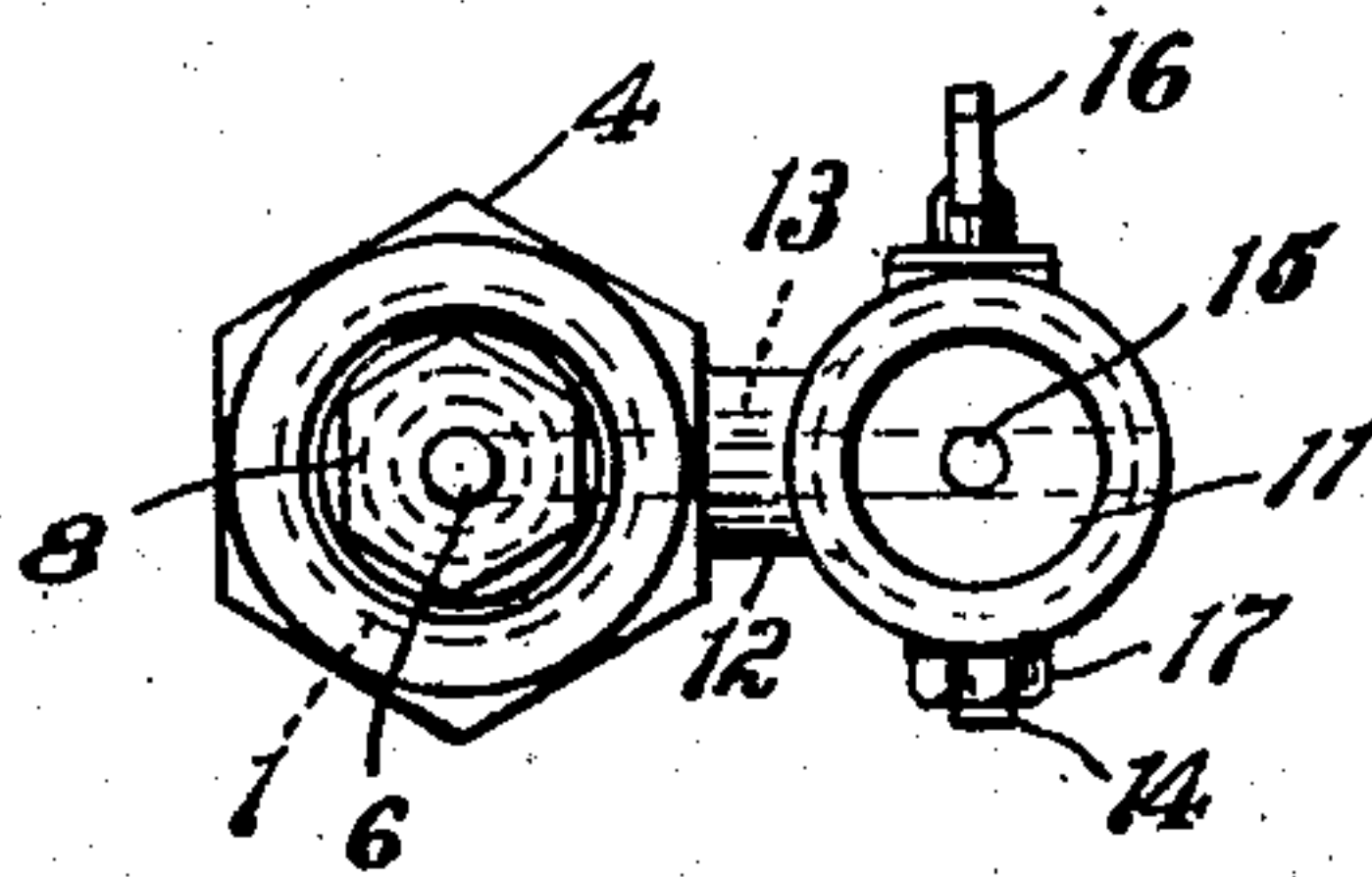
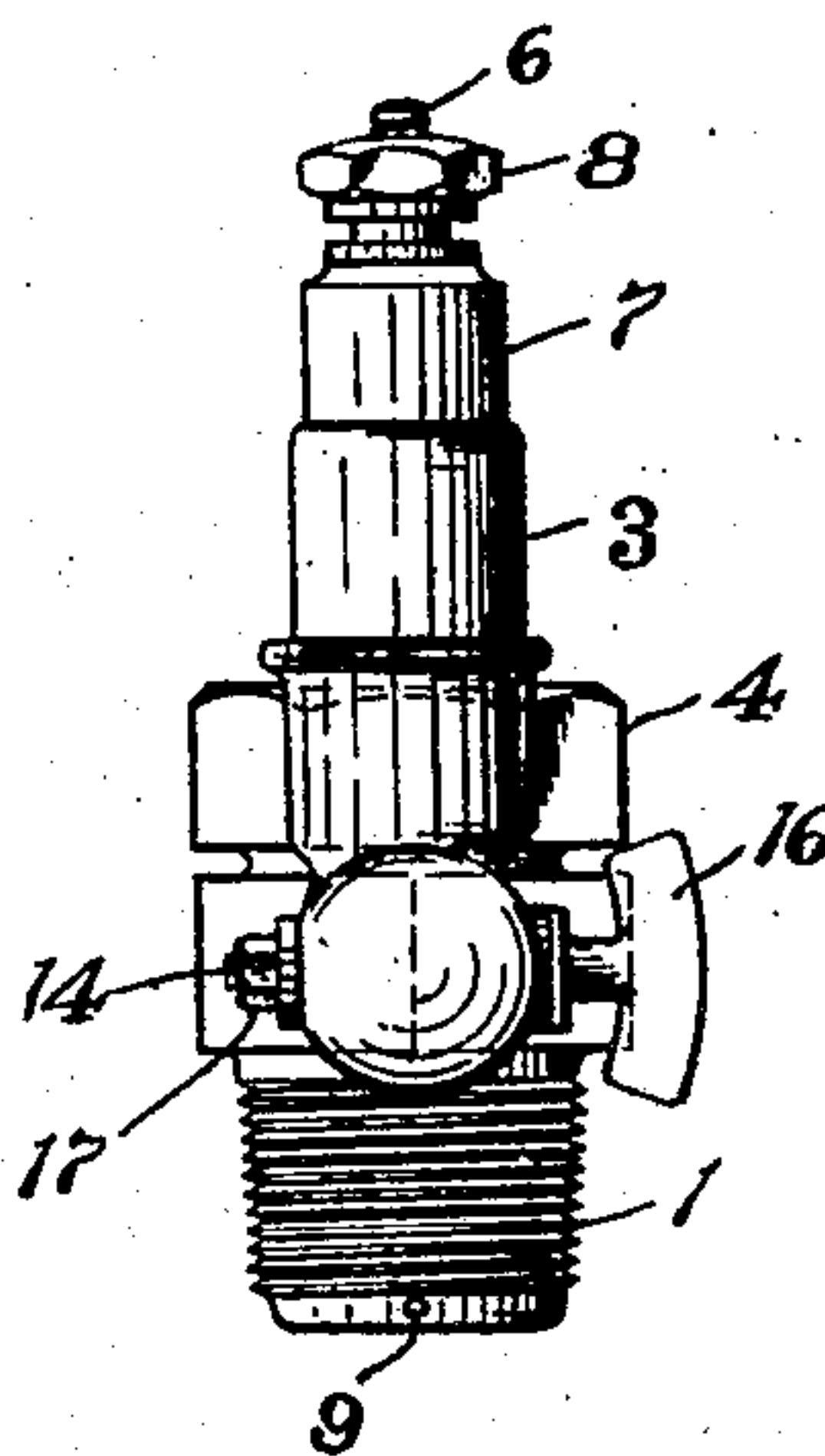


Fig. 3.

WITNESSES:

Walter Greenburg  
Anna M. Doe.

INVENTOR

JOHN G. SHEA

BY

*[Signature]*

ATTORNEYS

# UNITED STATES PATENT OFFICE.

JOHN G. SHEA, OF DETROIT, MICHIGAN.

## SPARK-PLUG.

No. 915,896.

Specification of Letters Patent.

Patented March 23, 1909.

Application filed June 13, 1908. Serial No. 438,265.

*To all whom it may concern:*

Be it known that I, JOHN G. SHEA, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Spark - Plugs, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to spark plugs for internal combustion engines and consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

15 In the drawings, Figure 1 is a view in elevation of a spark plug embodying features of the invention. Fig. 2 is a view in longitudinal section at right angles to Fig. 1. Fig. 3 is a plan view of the plug.

20 Referring to the drawings, 1 indicates a tubular nipple exteriorly taper screw-threaded for securing in the cylinder or combustion chamber wall of an explosive engine in the usual manner. The upper end is counterbored to receive a peripheral flange 2 of a bushing 3 of porcelain or like insulating material, a cap 4 screw-threaded on the nipple clamping the flange against endwise movement between packing rings 5 of suitable material. A rod 6 of suitable material is secured in the bushing, its upper screw-threaded end engaging a collar 7 on the upper end of the bushing, and having a hand bur 8 thereon which with the collar forms a convenient binding post or clamp. A transverse bar 9 or terminal secured in the lower end of the body is separated from the projecting lower end 10 of the rod to form a suitable spark gap. The bushing below the flange is slightly tapered and is of less diameter than the bore of the nipple.

45 An open cup 11 is integrally formed on or secured to the upper part of the nipple by an arm 12 and a duct 13 therefrom discharges into the annular space around the bushing just below the bushing collar. A manually operated rotatable valve plug 14 with a port 15 therethrough, controls the cup duct, the plug being preferably disposed as shown with thumb piece 16 and retaining nut 17. One advantage of this arrangement is the fact that the valve forms a convenient means for blowing off the cylinder and this materially assists in cleansing the terminals of the

55 plug as the air blasts dislodge and sweep out any carbon in the terminals or the plug interior, while there is no need of tapping an extra hole in the wall for a relief cock. Another feature is the conducting of any priming charge placed in the cup down over the terminals, thereby burning off any residue thereon when the charge is ignited and aiding in clearing the terminals that way while any extraneous matter lodged in the annular space around the bushing is flushed or washed out.

The device is simple, and not readily thrown out of adjustment and obviates the necessity of tapping the cylinder or compression chamber wall for both plugs and relief and priming cocks.

Obviously changes in the details of construction may be made without departing from the spirit of the invention, and I do not care to limit myself to any particular form or arrangement of parts.

What I claim as my invention is:—

1. A spark plug comprising a tubular nipple, an insulating bushing concentrically secured therein, a terminal in the bushing, a terminal in the nipple in operative relation to the bushing terminal, an arm on the upper end of the nipple, a priming cup on the arm discharging through a duct in the arm into the nipple above the terminals, and a manually operated shut off valve for the duct.

2. A spark plug comprising a tubular nipple, an insulating bushing having a tapered lower end of less diameter than the nipple bore and a central flange secured in the upper end of the nipple, an arm formed on the upper end of the nipple, a cup on the outer end of the arm connected by a passage through the arm to the nipple bore below the bushing collar, a terminal in the nipple below the bushing end, and a terminal extending through the bushing whose lower end is in operative relation to the nipple terminal.

3. A spark plug comprising a tubular, exteriorly screw-threaded nipple having a counterbored upper end, an axially apertured bushing having a central collar seated in the counterbored end of the bushing and a lower portion of less diameter than the nipple bore, a cap screw-threaded on the nipple clamping the collar in the nipple, a terminal rod extending through the bushing, a collar on the upper end of the bushing screw-



threaded on to the rod, a hand bur screw-  
threaded on the rod above the collar, a ter-  
minal diametrically secured in the nipple be-  
low the bushing in operative relation to the  
5 terminal rod, an arm extending from the up-  
per end of the nipple, a priming cup on the  
arm having a duct discharging through the  
arm into the nipple below the bushing collar,

and a valve closure rotatably secured at the  
base of the cup controlling the duct. 10

In testimony whereof I affix my signature  
in presence of two witnesses.

JOHN G. SHEA.

Witnesses:

C. R. STICKNEY,

WALTER A. GREENBURG.